CHAPTER 1

INTRODUCTION

1-1. Purpose. This manual provides design guidelines that will aid U.S. Army Corps of Engineers Districts and Divisions in the selection of remedial actions at uncontrolled hazardous waste sites. These guidelines are to be used in support of the Department of Defense Environmental Restoration Program (DERP), the Formerly Used Defense Sites (FUDS) Program, Resources Conservation and Recovery Act (RCRA), support to U.S. Environmental Protection Agency (EPA) activities associated with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and the remediation of hazardous waste contamination at Civil Works sites.

1-2. Applicability. This manual applies to those major subordinate commands and USACE districts assigned missions in support of the Nation*s efforts to remediate uncontrolled hazardous waste releases.

1-3. References. Required and related references cited in this manual are listed in Appendix A.

1-4. Explanation of Abbreviations and Terms. Abbreviations and terms used in this manual are explained in the Glossary (Appendix C).

1-5. USACE Responsibilities.

a. In response to the negative impacts of improper waste disposal, Congress passed PL 94-580, the Resource Conservation and Recovery Act (RCRA), and PL 96-510, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 (commonly referred to as “Superfund”). CERCLA was subsequently amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986.

b. Although the EPA has overall statutory responsibility for implementation of CERCLA, the USACE has a significant technical role in ensuring the implementation of remedial actions at DoD (and former DoD) sites where the uncontrolled release of hazardous substances has occurred. Remedial actions can consist of, but may not be limited to, field investigations to define the problem and determine its extent; feasibility studies to develop options for remedial action; selection of one or more cost-effective remedial actions; and final design and implementation (construction and provision for future monitoring).

c. The USAGE has multiple missions in the Nation*s efforts to remediate environmental problems resulting from past improper waste disposal practices.

(1) EPA*s program for implementation of Superfund provides for emergency action and for remedial action at disposal sites. The USACE*s responsibility under the IAG is primarily associated with the remedial action portion of the program. The USACE will be responsible for the management of design, construction, and installation of monitoring systems for those sites that are selected by EPA and assigned to the USACE. The USACE may also assist

EPA in review of state-managed projects for biddability and constructibility, or in design or construction execution oversight as EPA*s agent. The USACE assists the EPA during the field investigation and feasibility study phases. This assistance is essential to familiarize USACE personnel with the EPA-selected remedial action, and to assure the USAGE that the EPA-selected remedy is reasonable to design, construct, operate, and maintain.

(2) The USACE*s responsibilities under DERP (IRP and FUDS) are significantly broader than those associated with the support to EPA through the Superfund IAG. The USAGE may have full responsibility for: managing and/or conducting field investigations to define the problem and determine its extent; feasibility studies to develop options for remedial action; selection of a cost-effective remedial action; final design of the selected remedial action; and implementation of the selected remedial action. Implementation may include construction, operation and maintenance, and provisions for future monitoring.

(3) The USACE may provide support on RCRA facilities that must comply with RCRA Facility Investigation/Corrective Measures Study/Corrective Measure Implementation (RFI/CMS/CMI) criteria. RFI/CMS/CSI criteria, although technically similar to criteria for implementing remedial actions under CERCLA, must be performed in accordance with EPA 530/SW-88-028, OSWER Directive 9902.3. In addition, support provided under CERCLA may be required to comply with RCRA substantive requirements.

(4) The USAGE must address contamination attendant with Civil Works sites. These activities are described in detail in ER 1165-2-132.

d. Remedial action at a waste disposal site may take the form of onsite control, offsite disposal, onsite treatment, onsite storage, or combinations of these. For example, remedial action may consist of surface flow controls that divert and channel rainfall, thus preventing infiltration of water into the waste site. Or remedial action may deal specifically with controlling the spread of contaminated ground water, either by containment or pumping and treating. Other types of remedial action involve controlling the migration of dangerous gases and vapors from the site, removing the waste material from the site for treating and disposal, and cleaning up water mains, sewers, wetlands, soils, and water bodies that have been contaminated.

e. Many of the construction and design techniques associated with the USAGE*s portion of the program are familiar to USAGE personnel, but some are not and these will usually be associated with those sites where the greatest degree of hazard exists. For example, a principal difference in the construction aspect is the high degree of control necessary for proper management of USAGE and contractor activities.

f. In addition to providing support in programs to remediate the Nation*s hazardous and toxic radioactive waste (HTRW) problems, USAGE has responsibility for consideration of HTRW impacts in conjunction with its own Civil Works mission. Some of the activities described in this manual are applicable to HTRW investigations in the development and operation of Civil Works projects of the Corps. The same technical investigations and analysis

are required as for the Superfund, DERP, and RCRA efforts, but there are different administrative and reporting requirements. The reconnaissance phase of the development process for a Civil Works project requires an analysis of the potential for discovery of HTRW in the project area. Such analysis is to be based on available data and a field survey without sampling and testing. If there is potential for HTRW, a determination of the nature and extent of contamination as well as a preliminary analysis of remediation actions is required during the feasibility phase of Civil Works project development. In cases where the Corps is responsible for remediation of HTRW in conjunction with a Civil Works project, a detailed design and construction plan for the remediation would be required. ER 1165-2-132 provides guidance on consideration of HTRW in conjunction with Civil Works projects.

1-6. Safety. Health and safety are overriding concerns during all construction activities. These concerns are compounded on remedial action projects. However, a detailed discussion of construction safety is beyond the scope of this manual. The user of this manual should consult ER 385-1-92, Safety and Occupational Health Document Requirements for Hazardous, Toxic and Radioactive Waste Activities, EM 385-1-1, Safety and Health Requirements Manual, and local safety or occupational health officers for additional information on health and safety requirements associated with remedial activities.